

# Supporting Information for Two-Photon 3D Optical Data Storage via Aggregate Switching of Excimer-Forming Dyes

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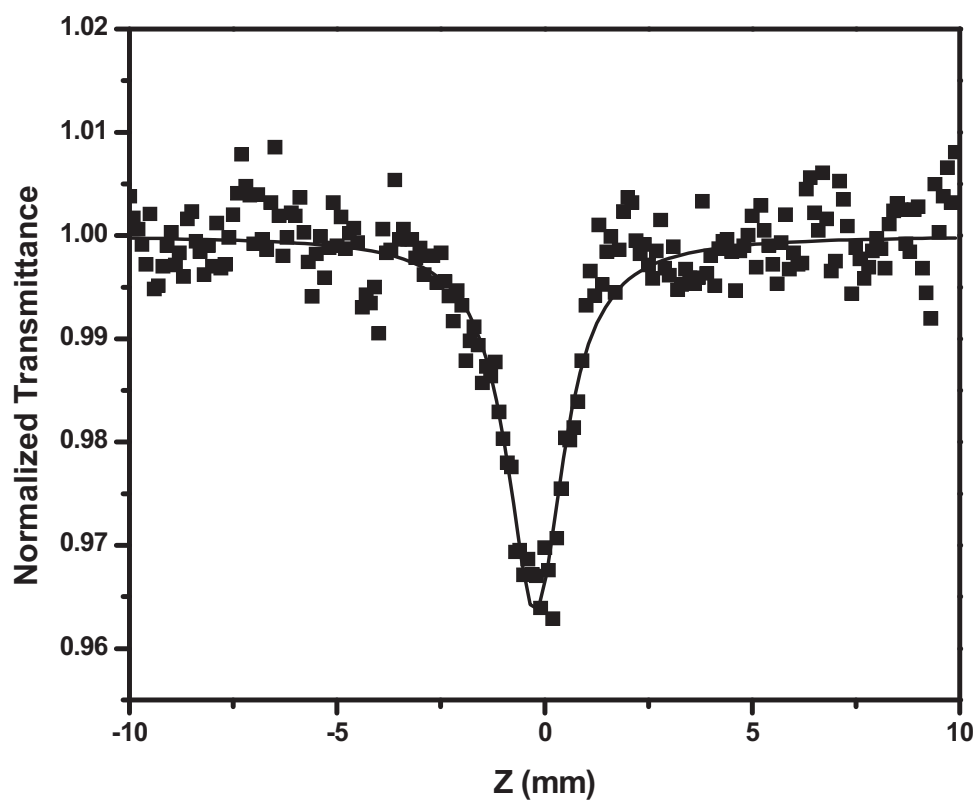
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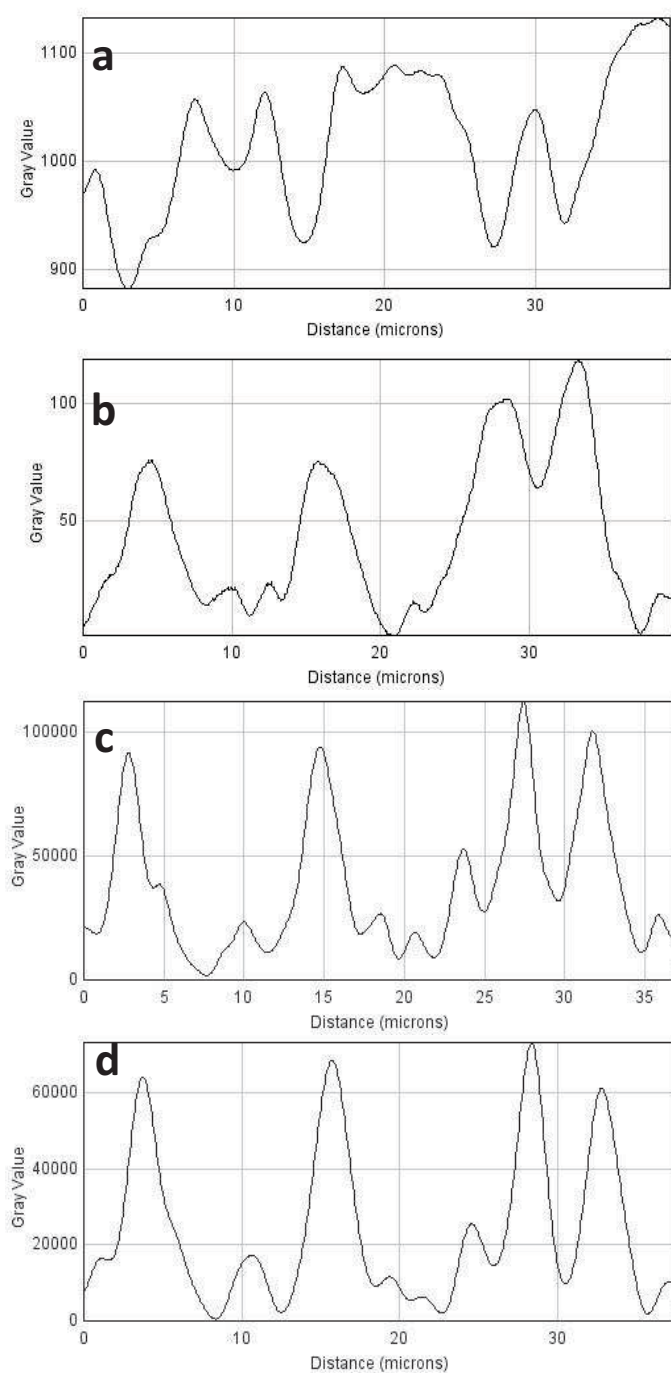
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**Figure S1.** Normalized transmittance established in the Z-scan measurement of a C18-RG solution (0.025M in toluene) measured at 650 nm with a peak incident irradiance of 60 GW/cm<sup>2</sup>. The solid line is a fit to an inverted Lorentzian model<sup>[32]</sup>, which follows the on-axis irradiance of a focused Gaussian beam.



**Figure S2.** Intensity profiles of cross-sections taken along a straight line through the spots in the top row of **Figure 5**. a) Raw fluorescence between 650 and 800 nm (**Figure 5a**). b) Raw fluorescence between 500 and 525 nm (**Figure 5b**). c) Composite image from the ratio of the intensities of the two images (**Figure 5c**). d) Composite image with a low pass filter applied.